

CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A brake band mechanism for an automatic transmission having a brake drum, said mechanism comprising:

a brake band encircling the brake drum, said brake band including opposing ends, said brake band operable to be compressed and expanded around the brake drum;

a two-stage hydraulic servo; and

a linkage coupled to said servo and said brake band, said servo activating said linkage to provide positive compression and expansion to said brake band for applying friction to the brake drum to control the ~~brake drum's~~ speed of rotation of said brake drum;

wherein said servo provides a rapid activation of said linkage during a first stage to rapidly expand said brake band, and a controlled compression and expansion of said brake band during a second stage.

Claim 2 (canceled)

Claim 3 (canceled)

Claim 4 (previously amended): The mechanism according to claim 1 further comprising a position sensor, said position sensor sensing the position of a piston of said servo.

Claim 5 (previously amended): The mechanism according to claim 1 further comprising at least one linkage sensor, said at least one linkage sensor sensing the position of said linkage.

Claim 6 (previously amended): The mechanism according to claim 1 further comprising at least one band strain sensor, said at least one band strain sensor measuring the strain on said brake band.

Claim 7 (previously amended): The mechanism according to claim 1 wherein said servo includes a first piston and a second piston, said first piston being smaller than said second piston, said first piston being operable to provide rapid movement of said brake band and said second piston being operable to provide fine adjustments of said brake band.

Claim 8 (previously amended): The mechanism according to claim 1 further comprising a clip structure, said clip structure being mounted to at least one of the opposing ends of said brake band and being coupled to said linkage.

Claim 9 (currently amended): A brake band mechanism for an automatic transmission having a brake drum, said mechanism comprising:

a brake band encircling the brake drum, said brake band including opposing ends, said brake band operable to be compressed and expanded around the brake drum;

a linkage coupled to said brake band;

a two-stage hydraulic servo, said linkage coupled to said servo, said servo including a servo rod position sensor for determining a position of a stroke rod of said servo, said servo providing a rapid activation of the linkage during a first stage to rapidly expand said brake band, and a controlled compression and expansion of said brake band during a second stage; and

a clip structure, said clip structure being mounted to an end of said brake band and being coupled to said linkage, said servo activating said linkage to provide positive compression and expansion to said brake band for applying friction to the brake drum to control the ~~brake drum's~~ speed of rotation of said brake drum;

wherein said servo includes a first piston and a second piston, said first piston being smaller than said second piston, said first piston being operable to provide rapid movement of said brake band and said second piston being operable to provide fine adjustments of said brake band.

Claim 10 (canceled)

Claim 11 (previously amended): The mechanism according to claim 9 further comprising at least one linkage sensor, said at least one linkage sensor sensing the position of said linkage.

Claim 12 (previously amended): The mechanism according to claim 9 further comprising at least one band strain sensor, said at least one band strain sensor measuring the strain on said brake band.

Claim 13 (previously amended): A method of controlling a shift of an automatic transmission comprising:

- providing a brake band for engaging a brake drum of an automatic transmission, said brake band being positively controlled for both apply and release pressure around said brake drum;

- applying a first fast active compression force to said brake band to a predetermined position; and

- providing a closed loop control of pressure on said brake band in both positive apply and release directions for controlling shift parameters of the transmission, based on a predetermined input;

- wherein a two-stage servo is used for controlling said brake band;

- wherein said servo has a first stage for rapidly applying band pressure, and a second stage for providing positive finite control of both apply and release pressures on said brake band during the shift.

Claim 14 (previously amended): The method of claim 13 wherein said shift parameters are selected from the group consisting of servo position, apply strut strain, servo pressure, band strain, engine RPM, transmission torque output, and combinations thereof.

Claim 15 (previously amended): The method of claim 13 further comprising a closed loop software control system controlling an apply solenoid.

Claim 16 (canceled)

Claim 17 (canceled)

Claim 18 (currently amended): The method of claim ~~17~~ 13 wherein said method comprises controlling said shift by first ramping up the pressure at the beginning of said shift and releasing pressure toward the end of said shift.

Claim 19 (currently amended): The method of claim 18 wherein said brake band is locked in ~~said~~ an applied position after the completion of said shift.

Claim 20 (previously amended): The method of claim 18 wherein a switch between ramping up and closed loop control is determined by inputs selected from the group consisting of servo position, apply strut strain, servo pressure, band strain, engine RPM, transmission torque output, and combinations thereof.

Claim 21 (original): The method of claim 18 wherein both apply and release pressures are independently controlled.

Claim 22 (original): The method of claim 21 wherein solenoids are used to independently control the apply and release hydraulic pressure.

Claim 23 (currently amended): The method of claim ~~47~~ 13 wherein said first stage is a smaller volume piston than said second stage.